**Probability rules worksheet NAME:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. If P(A) = 0.26 and P(B) = 0.41 and P(A∩B) = 0.1, find the following:
   1. P(A U B) =
   2. P(B|A) =
   3. Are A and B disjoint events? Why or why not?
   4. Are A and B independent events? Why or why not?
2. If P(G) = 0.42, P(M) = 0.33 and G and M are independent, what’s the probability of G and M?
3. If P(W) = 0.6 and P(J) = 0.34 and P(J|W) = 0.2, find the following:
4. P(W and J) =
5. P(W or J) =
6. If P(Y) = 0.45 and P(L) = 0.60 and P(Y ∩ L) = 0.22, find the following:
7. P(Y U L) =
8. P(L|Y) =
9. Are Y and L disjoint events? Why or why not?
10. Are Y and L independent events? Why or why not?
11. If P(D) = 0.32, P(R) = 0.13 and D and R are disjoint, what is the probability of D or R?

1. If P(T) = 0.51 and P(B) = 0.28 and P(B|T) = 0.18, find the following:
2. P(T and B) =
3. P(T or B) =
4. Suppose in a lab 24% of the mice are albino, 56% are brown, and the rest are grey.
5. What is the probability that a randomly selected mouse is:
6. Grey
7. Not albino
8. Grey or Albino
9. If the type of mouse is independent of the next what is the probability that:
10. 2 randomly selected mice are both brown?
11. 2 randomly selected mice are albino then brown?
12. 2 randomly selected mice are albino and grey?
13. 2 randomly selected mice are not grey?
14. At least 1 out of 4 randomly selected mice is albino?
15. The first albino mouse is the 5th one selected?
16. In the parking lot of the a large mall 64% of cars are foreign made, 12% are the color blue and 7.7% are blue and foreign made cars.
17. Draw a Venn Diagram
18. What is the probability that a randomly selected car was:
19. A foreign car or a blue car?
20. Not a foreign car and a blue car?
21. A foreign car given it was blue?
22. Not blue given it was not a foreign car?
23. Is being a foreign car and being blue mutually exclusive? independent?
24. The following table shows the breakdown of sex and degree among a university’s faculty.

What is the probability that a randomly selected professor is

1. Male and has a Doctorate
2. Male or has a Doctorate
3. Is a Male given they have a Doctorate
4. A female with a Masters degree
5. Is sex and degree independent? Disjoint?

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